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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/423,606	11/12/1999	KAZUTAKA HAYASHI	3114-0025-0X	6947

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EXAMINER

NOLAN, SANDRA M

ART UNIT

PAPER NUMBER

1772

DATE MAILED: 07/09/2002

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/423,606

Applicant(s)

HAYASHI ET AL.

Examiner

Sandra M. Nolan

Art Unit

1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 7-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 22 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claims

1. Claims 1-23 are pending.

Election/Restriction

2. This application contains claims 7-21, drawn to an invention nonelected with traverse in the response of November 5, 2001 (Paper No. 6). A complete reply to the action must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Abstract

3. The new abstract has been entered and is acceptable.

Objection Withdrawn

4. The objection to claims 4-6 for improper multiple dependency is withdrawn in view of applicants' amendments in the response dated April 26, 2002 (Paper No. 9).

Rejection Withdrawn

5. The 35 USC 103 rejection of claims 1-3 as unpatentable over Numata et al (US 5,045,751) in view of JP 07331172A and Hanson et al (US 5,328,975), as stated in section 9 of the November 26, 2001 Office Action (Paper No. 7), is withdrawn in view of applicants' arguments in Paper No. 9.

New Rejections

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- 103
w/
7. Claims 1, 5, 6, 22, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Hanson et al (US 5,328,975).

Hanson teaches coating compositions containing mixtures (col. 1, line 55) of organoalkoxysilanes of the formula $R_xSi(OR')_{4-x}$ (abstract; claim 1 of the patent), in which R may be vinyl, γ -glycidoxypropyl* or γ -methacryloxypropyl (col. 1, lines 47-49) and R' may be low molecular weight alkyl (col. 1, line 42-43) [Emphasis added]. The compositions also contain $Ti(OR'')_4$, with R'' preferably being C₁₋₄ alkyl (col. 2, lines 5-8); solvents (col. 2, lines 52-53 and col. 6, line 36) and TiO_2 , tin oxide or zirconia pigments (col. 6, lines 31 and 41).

Since applicants' compound (2) may be $Si(OR_2)_4$ (when q=1, per page 6, line 9 of the specification), Hanson's mixtures contain both compound (1) and compound (2).

*Glycidoxy groups are well known cyclic ether moieties.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hanson.

Hanson is discussed above. It fails to teach coating compositions containing the amounts of compounds (1), (2) and (3) claimed.

It would have been obvious to one having ordinary skill in the art at the time that the invention was made to employ suitable amounts of reactants in making coating compositions based on the compositions of Hanson.

In the absence of convincing objective evidence to the contrary, the determination of suitable amounts of the compounds recited by Hanson in coating compositions would be readily determined by routine experimentation.

11. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hanson in view of Morishima et al (US 5,271,768).

Hanson is discussed above. It fails to teach polymerization initiators.

Morishima shows the use of a reaction catalyst (col. 2, lines 21-22 and lines 63+) in a coating composition containing multiple siloxane reactants (col. 2, lines 45+) and a metal alkoxide reactant (col. 2, lines 11+).

The patents are analogous because they deal with coatings based on siloxane and metal alkoxide reactants.

It would have been obvious to one having ordinary skill in the art at the time that the invention was made to employ the catalyst of Morishima in the compositions of Hanson in order to promote the quick reaction of the ingredients.

The motivation to employ the catalyst of Morishima in the compositions of Hanson is found at col. 2, lines 21-22 of Morishima, where the use of the catalyst to assist in the reaction of the siloxane and metal alkoxide ingredients is taught.

It is deemed desirable to make coatings that react quickly in order to cut the time needed to coat substrates with them.

The terms "polymerization initiator" and "catalyst" are deemed to be synonymous.

12. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hanson in view of JP 03055828A (abstract only).

Hanson is discussed above. While it teaches pigments and solvents in its siloxane/metal alkoxide compositions, it fails to teach dispersants.

JP 03055828A teaches that a composition containing polysiloxane and metal alkoxide reactants (first paragraph of abstract) can be dispersed into a semiconductor element (title; second paragraph of abstract).

The references are analogous because they both deal with the compositions containing siloxanes and metal alkoxides.

It would have been obvious to one having ordinary skill in the art at the time that the invention was made to employ a dispersant along with the compositions of Hanson in order to facilitate their dispersion into semiconductor elements, such as those taught by JP 03055828A.

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The motivation to employ a dispersant with the compositions of Hanson is found in the title and the second paragraph of JP 03055828A, where dispersions of similar siloxane/metal alkoxide compositions into semiconductor elements are taught.

It is deemed desirable to use dispersants with siloxane/metal alkoxide compositions to help insure that the compositions are effectively dispersed.

Response to Arguments

13. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication should be directed to Sandra M. Nolan, whose telephone number is 703/308-9545. The Examiner can normally be reached on Monday through Thursday, from 6:30 am to 4:00 pm, Eastern Time.

If attempts to reach the Examiner by telephone are unsuccessful, her supervisor, Harold Pyon, can be reached at 703/308-4251. The general fax number for the art unit is 703/305-5436. The fax number for after final communications is 703/872-9310. The receptionist answers 703/308-0661.



S. M. Nolan
Patent Examiner
Technology Center 1700

SMN/smn
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